

B-16215
CERTIFIED MAIL
RETURN RECEIPT REQUESTED
7009 1410 0000 0625 4445

CC: Dept. of Env. & Nat. Resources
USEP
OE 061-10
WFW
141
ILD 041550 567



135th Street & New Avenue
Lemont, IL 60439-3659

CITGO Petroleum Corporation

June 4, 2010

Mr. Steve Nightingale, P.E. Manager
Permit Section
Bureau of Land
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, IL 62794-9276

Intent to Close Land Treatment Facility

Dear Mr. Nightingale:

This is in response to recent discussions between Rob Watson of the IEPA and Kevin Moss of the CITGO-Lemont Environmental Department concerning renewal of the RCRA permit for the Lemont Refinery. Specifically, the CAMU option at the Land Treatment Facility (LTF) as outlined in the original RCRA permit will not be pursued. Based on the information gained during the past several years of Corrective Action (CA) investigations it has been determined that a CAMU will likely not be needed to manage CA wastes. Therefore, the intent of the refinery is to proceed to closure of the LTF and not pursue the CAMU option.

As discussed a formal withdrawal of the CAMU permit modification request is not needed (or requested) at this time.

If there are questions or if additional information is required, please contact Kevin Moss at (630) 257-4452 or me at (630) 257-4450.

Sincerely,

C. W. Harmon, Manager
Health, Safety, Security & Environmental

KJM/PLM

RECEIVED

JUN 08 2010

IEPA-BOL
PERMIT SECTION



CITGO Petroleum Corporation

135th Street & New Avenue
Lemont, IL 60439-3659

June 9, 2010

Stephen F. Nightingale, P.E.
Manager, Permit Section, Bureau of Land
Illinois Environmental Protection Agency
Bureau of Land - #33
Permit Section
1021 North Grand Avenue East
Post Office Box 19276
Springfield, IL 62794-9276

1978030004 – Will County

Lemont Refinery

ILD 041# 550 567

Log. No.: B-162R

Supplemental Information in Response to IEPA Requests

RECEIVED

JUN 14 2010

**IEPA-BOL
PERMIT SECTION**

Dear Mr. Nightingale:

On April 23, 2007, a Resource Conservation and Recovery Act (RCRA) Part B Permit Renewal Application (Renewal Application) was submitted for the CITGO Petroleum Company, LLC, Lemont Refinery (the Refinery). The supplemental information provided is in response to April 20, 2010 and May 14, 2010 email requests. The specific requests included:

- **A map added to the Corrective Action section of the Permit Application (Section K) "...that details all the pertinent information regarding the corrective action activities at the site (GMZ, remedial activities (such as the French Drain, groundwater recover wells, skimmer wells etc.), GWM wells, piezometers, surface water gauges, etc.)."**
- **An additional table of information to be added to Section K regarding construction details for monitoring wells included in the Site Wide Groundwater Monitoring Program**
- **Corrections to the Table of Contents for Tables in Section I**

In addition to these changes, several associated editorial revisions were included. These revisions include updating Section 4.0 of the Introduction as well as additions to several Tables of Contents.

**Attachment 1
Replacement Pages**

RECEIVED

JUN 14 2010

IEPA-BOL
PERMIT SECTION

**RENEWAL PART B PERMIT APPLICATION
VOLUME 1, COVER PAGE**

**Remove Cover Page
and replace with the attached Cover Page.**

RECEIVED
JUN 14 2010
IEPA-BOL
PERMIT SECTION

**RCRA PERMIT RENEWAL APPLICATION
THE LEMONT REFINERY
CITGO PETROLEUM CORPORATION
Lemont, Illinois**

Submitted by:

The Lemont Refinery

**April 23, 2007
Revised July 31, 2007; August 10, 2007; June 3, 2010**

RECEIVED
JUN 14 2010
IEPA-BOL
PERMIT SECTION

**RENEWAL PART B PERMIT APPLICATION
VOLUME 1, TABLE OF CONTENTS**

**Remove Table of Contents
and replace with the attached Table of Contents.**

TABLE OF CONTENTS

Illinois Environmental Protection Agency Checklist

Introduction

A Forms, Certifications, Confidentiality, and Public Involvement

- A.1 Forms and Permits
 - A.1.1 RCRA Part A Permit Application
 - A.1.2 Permits or Construction Approvals
- A.2 Certifications
 - A.2.1 Siting Certification
 - A.2.2 Facility Certification
 - A.2.3 Technical Information Certification
 - A.2.4 Prior Conduct Certification
- A.3 Public Disclosure Exemption Claims and Trade Secret Claims
 - A.3.1 Information Claimed Exempt from Public Disclosure
 - A.3.2 Trade Secrets Claims
 - A.3.3 Exempt or Exempt-In-Part Data Claims
 - A.3.4 Justification Letter
 - A.3.5 Privileged Information
- A.4 Public Participation
 - A.4.1 Facility Mailing List and Information Repositories
 - A.4.1.1 Facility Mailing List
 - A.4.1.2 Identification of Repositories
 - A.4.1.3 Contents of Repository, Public Notice of Repository Availability
 - A.4.1.4 Documentation of Public Notices of Repositories
 - A.4.2 Notification of Permit Application Submittal
 - A.4.2.1 Content of Permit Application Notice
 - A.4.2.2 Documentation of Permit Application Notice
 - A.4.2.3 New Combustion Units
 - A.4.3 Pre-application Meeting

B Facility Description

- B.1 General Description
 - B.1.1 Operation of Facility
 - B.1.2 Process Flow Diagram
 - B.1.3 Units
- B.2 Topographic Map
 - B.2.1 General Map Requirements

	B.2.1.1	Facility + One Mile
	B.2.1.2	Facility + 1,000 Feet
	B.2.2	Additional Map Requirements for New Land Disposal Facilities
	B.2.3	Legal Description
B.3	Location Standards	
	B.3.1	Seismic Standard
	B.3.2	Floodplain Standard
	B.3.3	Facilities in the 100-Year Floodplain
	B.3.4	Existing Facilities not in Compliance with 35 IAC 724.118(b)
B.4	Traffic Information	
B.5	Operating Record	
	B.5.1	Contents of Operating Record
	B.5.2	Installation of Tanks
C	Waste Characteristics	
D1	Containers	
D2	Tank Systems	
D3	Waste Piles	
D4	Surface Impoundments	
D5	Incinerators	
D6	Landfills	
D7	Land Treatment	
D10	Miscellaneous Units	
E	Groundwater Monitoring	
	E.1	Exemption from Groundwater Protection Requirements
	E.2	Interim Status Groundwater Monitoring Data
	E.3	Historical Hydrogeological Summary
	E.4	Topographic Map Requirements
	E.5	Contaminant Plume Description
	E.6	Detection Monitoring Program
	E.6.1	Indicator Parameters, Waste Constituents, Reaction Products to be Monitored
	E.6.2	General Monitoring Program Requirements
	E.6.3	Groundwater Monitoring System
	E.6.4	Description of Sampling and Analysis Procedures
	E.6.5	Evaluation of Groundwater Surface

- E.6.6 Background Quality
- E.6.7 Statistical Evaluations
- E.6.8 Statistically Significant Increases
- E.7 Compliance Monitoring Program
- E.8 Corrective Action Program
- E.9 Reporting Requirements
- E.10 Description of Corrective Action for Solid Waste Management Units

F Procedures to Prevent Hazards

- F.1 Security
 - Claimed Exempt in the Public Record Version*
 - F.1.1 Waiver from the Security Requirements
 - F.1.2 24-Hour Surveillance System
 - Claimed Exempt in the Public Record Version*
 - F.1.3 Barrier and Controlled Entry
 - Claimed Exempt in the Public Record Version*
 - F.1.4 Warning Signs
- F.2 Inspection Requirements
 - F.2.1 Inspection Log
 - F.2.1.1 Items Inspected
 - F.2.1.2 Types of Problems
 - F.2.1.3 Inspection Frequency
 - F.2.2 Repair Log
 - F.2.2.1 Contents of Repair Log
 - F.2.2.2 Repair Times
 - F.2.3 Container and Container Storage Area Inspection
 - F.2.4 Tank System Inspection
- F.3 Equipment Requirements
 - F.3.1 Waiver
 - F.3.2 Internal Communications
 - Claimed Exempt in the Public Record Version*
 - F.3.3 External Communications
 - Claimed Exempt in the Public Record Version*
 - F.3.4 Water for Fire Control
 - Claimed Exempt in the Public Record Version*
 - F.3.5 Testing and Maintenance of Emergency Equipment
 - F.3.5.1 Equipment Testing
 - F.3.5.2 Schedule
 - F.3.6 Aisle Space
- F.4 Preventive Procedures, Structures, and Equipment
 - F.4.1 Unloading Operations
 - F.4.2 Run-off
 - F.4.3 Water Supplies
 - F.4.4 Equipment and Power Failure
 - F.4.5 Personnel Protection Equipment

RECEIVED
JUN 14 2010
IEPA-BOL
PERMIT SECTION

G Evaluation-Assessment of Potential Hazards and Contingency Plan

H Personnel Training

- H.1 Training Program
 - H.1.1 Training Director
 - H.1.2 Job Title – Job Description
 - H.1.3 Relevance of Training to Job Position
 - H.1.4 Outlines of Training Programs
 - H.1.4.1 Training Content, Frequency and Techniques
 - H.1.4.2 Training for Emergency Response
- H.2 Implementation of Introductory and Continuing Training Programs
 - H.2.1 Completion of Training
 - H.2.2 Recordkeeping

I Closure and Post-Closure Requirements

- I.1 Closure Plan
 - I.1.1 Closure Performance Standard
 - I.1.1.1 General Requirements
 - I.1.1.2 Specific Requirements
 - I.1.2 Maximum Operations and Waste Inventory
 - I.1.3 Partial Closure
 - I.1.4 Closure Methods
 - I.1.5 Removal and Decontamination Procedures
 - I.1.6 Other Activities
 - I.1.7 Unit Specific Closure Activities
 - I.1.7.1 Closure of Container Storage Areas
 - I.1.7.2 Closure of Tank Systems
 - I.1.8 Closure Schedule
 - I.1.9 Expected Year of Final Closure
 - I.1.10 Alternate Requirements
- I.2 Post-Closure Plan
 - I.2.1 Applicability
 - I.2.2 Post-Closure Inspection Plan
 - I.2.2.1 Items Inspected
 - I.2.2.2 Types of Problems
 - I.2.2.3 Inspection Frequency
 - I.2.2.4 Documentation of Inspection
 - I.2.2.5 Repair Log
 - I.2.2.6 Contents of Repair Log
 - I.2.2.7 Repair Times
 - I.2.3 Post-Closure Monitoring Plan
 - I.2.4 Post-Closure Maintenance Plan
 - I.2.4.1 Procedures, Equipment, and Materials
 - I.2.4.2 Rationale

- I.3 Survey Plat
 - I.3.1 Identify Units/Areas
 - I.3.2 Note on Plat
 - I.3.3 Certification of Plat
 - I.3.4 Recording of Survey Plat
 - I.3.5 Existing Facilities with Closed Disposal Units
- I.4 Notice in Deed and Certification
 - I.4.1 Notice in Deed
 - I.4.2 Certification of Notification
 - I.4.3 Existing Facilities with Closed Disposal Units
- I.5 Closure Cost Estimate
 - I.5.1 Third Party Costs
 - I.5.2 Maximum Cost Estimate
 - I.5.3 Unit Costs
 - I.5.4 Annual Updates
- I.6 Financial Assurance Mechanism for Closure
- I.7 Post-Closure Cost Estimate
 - I.7.1 Third Party Costs
 - I.7.2 Unit Costs
 - I.7.3 Annual Cost Estimate
 - I.7.4 Post-Closure Cost Estimate
 - I.7.5 Annual Updates
- I.8 Financial Assurance Mechanism for Post-Closure Care
- I.9 Liability Requirements
 - I.9.1 Copies of Financial Assurance Documentation
 - I.9.2 Request for Variance
- I.10 State Mechanisms

J Other Federal Laws

K Corrective Action

- K.1 Identification of Solid Waste Management Units
- K.2 Characterization of the SWMUs
- K.3 Characterization of Releases from SWMUs
- K.4 Information Required in the Renewal Application
 - K.4.1 Required Information if USEPA Oversaw Initial Corrective Action Program
 - K.4.2 Required Information if Illinois EPA Oversaw Initial Corrective Action Program
 - K.4.2.1 Chronology of Corrective Action Efforts to Date
 - K.4.2.2 Corrective Action Correspondence With Illinois EPA
 - K.4.2.3 Solid Waste Management Units
 - K.4.2.4 Groundwater Monitoring

AA Air Emission Standards for Process Vents

BB Air Emission Standards for Equipment Leaks

CC Air Emission Standards for Tanks, Surface Impoundments, and Containers

- CC.1 Exemptions from Subpart CC
- CC.2 Exemptions from 35 IAC 724.984 through 724.987 and 40 CFR 264.1084 through 264.1087
- CC.3 Standards for Tanks
- CC.4 Standards for Surface Impoundments
- CC.5 Standards for Containers
 - CC.5.1 Level 1 Standards
 - CC.5.1.1 Containers
 - CC.5.1.2 Covers and Closure Devices
 - CC.5.2 Level 2 Standards
 - CC.5.2.1 Container
 - CC.5.2.2 Covers, Closure Devices, Pressure Relief Devices, and Safety Device
 - CC.5.3 Level 3 Standard
- CC.6 Waste Transfer
- CC.7 Repairs
- CC.8 Standards for Closed-vent Systems and Control Devices
- CC.9 Inspection and Monitoring Requirements
 - CC.9.1 Compliance with 35 IAC 724.984 through 724.987 and 40 CFR 264.1084 through 264.1087
 - CC.9.2 Implementation of a Written Plan
- CC.10 Record Keeping Requirements
- CC.11 Reporting Requirements

LIST OF TABLES

A-1	Other Environmental Permits
A-2	Permit Application Documents at the Lemont Public Library District
A-3	Permit Application Documents at the Lemont Village Hall
B-1	Waste Management Units Present at the Refinery
B-2	Facility Map Requirements Cross-Reference Table
B-3	Wells Within 1000 Feet of the Refinery's Property Boundary
E-1	Facility Map Requirements Cross-Reference Table
E-2	Hydraulic Properties of the Uppermost Aquifer
E-3	Indicator Parameters for Groundwater Samples
E-4	Well and Groundwater Elevation Data
E-5	Construction Details of Wells and Piezometers
E-6	Sample Container and Preservative Specifications for Groundwater Samples
E-7	Preparatory and Analytical Methods for Groundwater Samples
E-8	Acceptance Criteria for Quality Control Samples
E-9	Derived Background Values—Groundwater Monitoring Program
E-10	Additional Monitoring Limit Values – Groundwater Monitoring Program
E-11	Illinois EPA Groundwater Database Well UA-1 Values – 1998-2006
F-1	Land Treatment Facility Typical Inspection Schedule
F-2	Emergency Equipment Inspection Schedule
F-3	Justification for Inspection Frequencies
H-1	Refinery Positions Related to RCRA Hazardous Waste Management Activities
I-1	Maximum Inventory of Waste Treated at the LTF
I-2	Closure Schedule for the LTF
I-3	Analytical Parameters for UA-Series Wells
I-4	Derived Background Values-Groundwater Monitoring Program
I-5	Modified Skinner Constituents for Analysis
I-6	Unsaturated Zone Constituents for Analysis
I-7	Complete Unsaturated Zone Monitoring Parameter List and Associated Monitoring Limits
I-8	Summary of Soil Analytical Data for Unsaturated Zone Monitoring – Years 1-10
I-9	Closure Cost Estimate
I-10	Post-Closure Cost Estimate
K-1	Chronology of Corrective Action Efforts to Date
K-2	Corrective Action Correspondence
K-3	Waste Management Units Present at the Refinery
K-4	Construction Details of Site Wide Groundwater Monitoring Program Wells

LIST OF FIGURES

CC-1	Container Control Levels
B-1	Facility + 1 Mile
B-2	Facility + 1000 feet (1 of 5)
B-3	Facility + 1000 feet (2 of 5)
B-4	Facility + 1000 feet (3 of 5)
B-5	Facility + 1000 feet (4 of 5)
B-6	Facility + 1000 feet (5 of 5)
B-7	FEMA FIRM Map for Will County, Illinois
B-8	Key Map
B-9	USGS Topographic Contours
B-10	Detailed Access Point Descriptions
E-1	Geologic Cross-Section A-A'
E-2	Geologic Cross-Section F-F'
E-3	Cross-Section Locations
E-4	Locations of Monitor Wells and Piezometers
E-5	Potentiometric Surface Contour Map 4 th Quarter 2006 (Trihydro Corporation)
E-6	B-Series Piezometers Potentiometric Surface – October 2006 (Shaw)
E-7	UA-Series Wells Potentiometric Surface – October 2006 (Shaw)
E-8	Example Sample Label
E-9	Example Chain-of-Custody Form
E-10	Example Custody Seal
I-1	LTF Area I Soil-Core Sample Locations – November 2006
I-2	LTF Area II – IV Soil-Core Sample Locations –November 2006
K-1	Solid Waste Management Unit Location Map
K-2	Locations of Items Associated with Corrective Action

LIST OF APPENDICES

- A.1.1 RCRA Part A Permit Application
 - Attachment 1 List of Other Environmental Permits
 - Attachment 2 Topographic Map
 - Attachment 3 Facility Drawing & Aerial Photograph
- A.2.2 Facility Certification
- A.2.4 Prior Conduct Certifications
- A.3.3 Claim and Justification Letter for Exempt Data Claims
- A.4.1.1 Facility Mailing List
- A.4.1.4 Public Notice of Repository Availability and Permit Renewal Application Submittal
- A Versions of the Prior Conduct Certifications Available for Public Review
- B.2.3 Legal Descriptions of Property Owned by the Refinery
- E.6.2 Groundwater Sampling and Analysis Plan (Geraghty & Miller, Inc., December 1996)
- E.6.3 Well Completion Reports
- F.2.1 Typical Inspection Logs
- F.3.4 Certification of Adequate Water Volume and Pressure
- F Version of Section F Available for Public Review
- H.2.2.2 Example Training Record
- I.1 CAMU Permit Modification Request
- I.1.5 Soil-Core Sampling Standard Operating Procedures
- I.1.6-1 Unsaturated Zone Monitoring Plan and Addendum
- I.1.6-2 Groundwater Monitoring Plan and Addendum
- I.2.2 Facility Inspection Form
- I.2.2.6 Repair Log
- I.6 Financial Assurance Documentation
 - Claimed Exempt in the Public Record Version***
- I.6-A Version of Appendix I.6 Available for Public Review
- K.4.2.2-1 Chronological Summary of Correspondence Between Illinois EPA and the Lemont Refinery
- K.4.2.2-2 Chronological Copies of Letters and Permits Between the Illinois EPA and the Lemont Refinery

LIST OF ACRONYMS AND ABBREVIATIONS

°C	Degrees Celsius (Centigrade)
%CV	Relative Standard Deviation
°F	Degrees Fahrenheit
1990 Decision Guide	<u>Illinois EPA RCRA Part B Permit Application Decision Guide</u> (December 1990)
2006 Decision Guide	<u>Illinois EPA RCRA Part B Permit Application Decision Guide</u> (July 2006)
2006 Checklist	<u>Illinois EPA RCRA Part B Hazardous Waste Permit Application</u> <u>Completeness and Technical Evaluation Checklist</u> (July 2006)
AAS	Atomic Absorption Spectrometry
AASHO	American Association of State Highway Officials
ACL	Alternate Concentration Level
Act	Illinois Compiled Statutes Environmental Safety Environmental Protection Act
AEL	Appropriate Exposure Limit
Agency	U.S./Illinois Environmental Protection Agency
amsl	Above mean sea level
ANPR	Advanced Notice of Proposed Rulemaking
AOC	Area of Concern
API	American Petroleum Institute
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
atm	Atmospheres
bbl	Barrels
bgs	Below ground surface
BTZ	Below Treatment Zone
bpd	Barrels per Day
BTEX	Benzene, Toluene, Ethylbenzene, And Xylene
BIF	Boilers and Industrial Furnace
BOD ₅	Five-Day Biological Oxygen Demand
BP	Boiling Point
BTC	Background Threshold Concentration
BTU	British Thermal Units
BTZ	Below Treatment Zone
C	Ceiling
CAA	Clean Air Act
CAAPP	Clean Air Act Permit Program
CAMU	Corrective Action Management Unit
CAS	Chemical Abstracts Service Registry
CBT	computer-based training

LIST OF ACRONYMS AND ABBREVIATIONS (cont.)

CCR	Current Conditions Report
CFR	Code of Federal Regulations
CMI	Corrective Measures Implementation
CMS	Corrective Measures Study
CO	Carbon Monoxide
COC	Contaminants of Concern
COD	Chemical Oxygen Demand
COLIWASA	Composite Liquid Waste Sampler
CSM	Conceptual Site Model
CSSO	Central Security Services Office
CV	Coefficient of Variation
CWA	Clean Water Act
DOT	Department of Transportation
DQL	Data Quality Level
DRO	Diesel-Range Organic
ECD	Electron Capture Detector
EEGL	Emergency Exposure Guidance Limit
EI	Environmental Indicator
E&I	Electrical and Instrument
EPA	Environmental Protection Agency
EQL	Estimated Quantitation Limit
ERPG	Emergency Response Planning Guidelines
ERT	Environmental Response Team
ELUC	Environmental Land Use Controls
FCC	Fluid Catalytic Cracking Unit
FCCU	Fluid Catalytic Cracking Unit
FEMA	Federal Emergency Management Agency
FID	Flame-Ionization Detector
FIRM	Flood Insurance Rate Map
FOIA	Freedom of Information Act
g	Gram
gal.	Gallon
GC	Gas Chromatography
GDU	Gasoline Desulfurization Unit
GPD	Gallons Per Day

LIST OF ACRONYMS AND ABBREVIATIONS (cont.)

GPRA	Government Performance and Results Act
GRO	Gasoline-Range Organic
GMZ	Groundwater Management Zone
HAZWOPER	Hazardous Waste Operations and Emergency Response
HBL	Health-Based Level
HDPE	High-Density Polyethylene
HEBCA	Heat Exchanger Bundle Cleaning Area
HEXB	Heat Exchanger Bundle(s)
HF	Hydrofluoric
HF alky	Hydrofluoric alkylation (neutralization basin)
hPa	HectoPascals
HPLC	High-Performance Liquid Chromatography
HSA	Hollow Stem Auger
HSWA	Hazardous and Solid Waste Amendments
HWMF	Hazardous Waste Management Facility
HWMU	Hazardous Waste Management Unit
HSS&E	Health, Safety, Security, and Environmental
IAC	Illinois Administrative Code
IBC	Intermediate Bulk Container
ICPES	Inductively Coupled Plasma Emission Spectrometry
ICP-MS	Inductively Coupled Plasma – Mass Spectrometry
ID	Identification
IDL	Instrument Detection Limit
IDLH	Extremely Dangerous to Life or Health
IDOT	Illinois Department of Transportation
IL ELAP	Illinois Environmental Laboratory Accreditation Program
Ill. Rev. Stat.	Illinois Revised Statute
Illinois EOU	Illinois Emergency Operations Unit
IPCB	Illinois Pollution Control Board
IR	Infrared Spectrometry
kPa	KiloPascals
lb.	Pound
lbs.	Pounds
LCS	Laboratory Control Sample
LDR	Land Disposal Restriction
LEL	Lower Explosive Limit
LIMS	Laboratory Information Management System
LOQ	Limit of Quantitation
LTA	Land Treatment Area
LTF	Land Treatment Facility
LTL	Lower Tolerance Limit

LIST OF ACRONYMS AND ABBREVIATIONS (cont.)

MDEA	Monodiethanol amine
MDL	Method Detection Limit
MEA	Monoethanol amine
mg/kg	Milligram/kilogram
Misc.	Miscellaneous
mL	Milliliter
MOSC	Mobile Oil Sludge Coking
mph	Miles per hour
MPRSA	Marine Protection, Research, and Sanctuaries Act
MS	Mass Spectrometry
MS	Matrix Spike
MSD	Matrix Spike Duplicate
MSDS	Material Safety Data Sheet
MTBE	Methy Tert-Butyl Ether
MTR	Minimum Technology Requirement
MW	Molecular Weight
NA	North America (or Not Applicable)
NACE	National Association of Corrosion Engineers
NAPL	Non-aqueous Phase Liquids
NCDC	National Climatic Data Center
NELAP	National Environmental Laboratory Accreditation Program
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFA	No Further Action
NFPA	National Fire Prevention Association
NIOSH	National Institute for Occupational Safety and Health
NIST	National Institute of Standards and Testing
NP	Not Performed
NPDES	National Pollutant Discharge Elimination System
NRC	National Response Center
NTUS	Nephelometric Turbidity Units
OJT	On-the-Job Training
OPA	Oil Pollution Act
OSHA	Occupations Safety and Health Administration
Pa	Pascals
PAC	Powdered Activated Carbon
PAH	Polynuclear Aromatic Hydrocarbons
P.E.	Professional Engineer
PID	Photo Ionization Detector
PMP	Perimeter Monitoring Program
POC	Point of Compliance
PPB	Parts Per Billion
PPE	Personal Protective Equipment

LIST OF ACRONYMS AND ABBREVIATIONS (cont.)

ppm	Parts per million
ppm _v	Parts per million by volume
PQL	Practical Quantitation Limit
PSD	Prevention of Significant Deterioration
PVC	Polyvinyl Chloride
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
RAGS	<u>Risk Assessment Guidance for Superfund</u>
RCRA	Resource Conservation and Recovery Act
RCRIS	RCRA Information System
Refinery	Lemont, Illinois, Refinery
Renewal Application	RCRA Part B Permit Renewal Application
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RGN	Reactivity Group Number
RO	Remediation Objective
RPD	Relative Percent Difference
SCBA	Self-Contained Breathing Apparatus
SCFPU	Special Coker Feed Preparation Unit
SDWA	Safe Drinking Water Act
SG	Specific Gravity
SOP	Standard Operating Procedure
SPCC	Spill Prevention, Control, and Countermeasures
SPEGL	Short-Term Public Emergency Guidance Level
SPLP	Synthetic Precipitation Leaching Procedure
SR	State Route
STEL	Short-Term Exposure Limit
SVOC	Semivolatile Organic Compound
SW-846	<i>Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods</i> (U.S. EPA, Office of Solid Waste, Third Edition)
SWMU	Solid Waste Management Unit
SWPPP	Stormwater Pollution Prevention Plan
TACO	Tiered Approach to Corrective Action Objectives
TCLP	Toxicity Characteristic Leaching Procedure
TLV	Threshold Limit Value
TOC	Total Organic Carbon
TOX	Total Organic Halides
TPH	Total Petroleum Hydrocarbons

LIST OF ACRONYMS AND ABBREVIATIONS (cont.)

TRPH	Total Recoverable Petroleum Hydrocarbons
TRMA	Three Rivers Manufacturers' Association
TSDF	Treatment, Storage, and Disposal Facility
TU	Temporary Unit
TWA	Time-Weighted Average
UEL	Upper Exposure Limit
ug	Micrograms
ug/kg	Microgram/kilogram
UHC	Underlying Hazardous Constituent
UIC	Underground Injection Control
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
UTL	Upper Tolerance Limit
UTS	Universal Treatment Standard
UZM	Unsaturated Zone Monitoring
VCA	Voluntary Corrective Action
VHF	Very High Frequency
VOC	Volatile Organic Compound
VP	Vapor Pressure
VSI	Visual Site Inspection
WCSA	Waste Container Storage Area
WWTP	Wastewater Treatment Plant
WWTU	Wastewater Treatment Unit
ZOI	Zone of Incorporation

**RENEWAL PART B PERMIT APPLICATION
VOLUME 1, INTRODUCTION**

**Remove page 7 in Introduction Section
and replace with attached page 7.**

July 31, 2007, Modification—On July 31, 2007, the Refinery submitted to the Illinois EPA a response to Notices of Deficiency (NODs) identified by the Illinois EPA during their initial completeness review. The response was prepared so as to incorporate the requested information into the Renewal Application in the appropriate sections. Each modified page is indicated with a revision date of July 31, 2007.

August 10, 2007, Modification—On August 10, 2007, the Refinery submitted a supplemental information package related to the response to NODs submitted on July 31, 2007. This supplemental information package provided a revised list of analytical parameters for groundwater monitoring at the LTF. The revised list includes indicator parameters as well as waste constituents selected based on detections in the past five years of unsaturated zone monitoring at the LTF.

June 3, 2010, Modification—On June 3, 2010, the Refinery submitted a supplemental information package related to specific requests for information from the Illinois EPA. This package provided a new figure for Section K depicting locations of items associated with corrective action (Figure K-2), a new table for Section K listing construction details for wells associated with the Site Wide Groundwater Monitoring Program (Table K-4), and a correction for the Table of Contents for Tables in Section I.

**RENEWAL PART B PERMIT APPLICATION
VOLUME 2, TABLE OF CONTENTS**

**Remove Table of Contents
and replace with the attached Tables of Contents.**

TABLE OF CONTENTS

Illinois Environmental Protection Agency Checklist

Introduction

A Forms, Certifications, Confidentiality, and Public Involvement

- A.1 Forms and Permits
 - A.1.1 RCRA Part A Permit Application
 - A.1.2 Permits or Construction Approvals
- A.2 Certifications
 - A.2.1 Siting Certification
 - A.2.2 Facility Certification
 - A.2.3 Technical Information Certification
 - A.2.4 Prior Conduct Certification
- A.3 Public Disclosure Exemption Claims and Trade Secret Claims
 - A.3.1 Information Claimed Exempt from Public Disclosure
 - A.3.2 Trade Secrets Claims
 - A.3.3 Exempt or Exempt-In-Part Data Claims
 - A.3.4 Justification Letter
 - A.3.5 Privileged Information
- A.4 Public Participation
 - A.4.1 Facility Mailing List and Information Repositories
 - A.4.1.1 Facility Mailing List
 - A.4.1.2 Identification of Repositories
 - A.4.1.3 Contents of Repository, Public Notice of Repository Availability
 - A.4.1.4 Documentation of Public Notices of Repositories
 - A.4.2 Notification of Permit Application Submittal
 - A.4.2.1 Content of Permit Application Notice
 - A.4.2.2 Documentation of Permit Application Notice
 - A.4.2.3 New Combustion Units
 - A.4.3 Pre-application Meeting

B Facility Description

- B.1 General Description
 - B.1.1 Operation of Facility
 - B.1.2 Process Flow Diagram
 - B.1.3 Units
- B.2 Topographic Map
 - B.2.1 General Map Requirements

	B.2.1.1	Facility + One Mile
	B.2.1.2	Facility + 1,000 Feet
	B.2.2	Additional Map Requirements for New Land Disposal Facilities
	B.2.3	Legal Description
B.3	Location Standards	
	B.3.1	Seismic Standard
	B.3.2	Floodplain Standard
	B.3.3	Facilities in the 100-Year Floodplain
	B.3.4	Existing Facilities not in Compliance with 35 IAC 724.118(b)
B.4	Traffic Information	
B.5	Operating Record	
	B.5.1	Contents of Operating Record
	B.5.2	Installation of Tanks
C	Waste Characteristics	
D1	Containers	
D2	Tank Systems	
D3	Waste Piles	
D4	Surface Impoundments	
D5	Incinerators	
D6	Landfills	
D7	Land Treatment	
D10	Miscellaneous Units	
E	Groundwater Monitoring	
	E.1	Exemption from Groundwater Protection Requirements
	E.2	Interim Status Groundwater Monitoring Data
	E.3	Historical Hydrogeological Summary
	E.4	Topographic Map Requirements
	E.5	Contaminant Plume Description
	E.6	Detection Monitoring Program
	E.6.1	Indicator Parameters, Waste Constituents, Reaction Products to be Monitored
	E.6.2	General Monitoring Program Requirements
	E.6.3	Groundwater Monitoring System
	E.6.4	Description of Sampling and Analysis Procedures
	E.6.5	Evaluation of Groundwater Surface

- E.6.6 Background Quality
- E.6.7 Statistical Evaluations
- E.6.8 Statistically Significant Increases
- E.7 Compliance Monitoring Program
- E.8 Corrective Action Program
- E.9 Reporting Requirements
- E.10 Description of Corrective Action for Solid Waste Management Units

F Procedures to Prevent Hazards

- F.1 Security
 - Claimed Exempt in the Public Record Version*
 - F.1.1 Waiver from the Security Requirements
 - F.1.2 24-Hour Surveillance System
 - Claimed Exempt in the Public Record Version*
 - F.1.3 Barrier and Controlled Entry
 - Claimed Exempt in the Public Record Version*
 - F.1.4 Warning Signs
- F.2 Inspection Requirements
 - F.2.1 Inspection Log
 - F.2.1.1 Items Inspected
 - F.2.1.2 Types of Problems
 - F.2.1.3 Inspection Frequency
 - F.2.2 Repair Log
 - F.2.2.1 Contents of Repair Log
 - F.2.2.2 Repair Times
 - F.2.3 Container and Container Storage Area Inspection
 - F.2.4 Tank System Inspection
- F.3 Equipment Requirements
 - F.3.1 Waiver
 - F.3.2 Internal Communications
 - Claimed Exempt in the Public Record Version*
 - F.3.3 External Communications
 - Claimed Exempt in the Public Record Version*
 - F.3.4 Water for Fire Control
 - Claimed Exempt in the Public Record Version*
 - F.3.5 Testing and Maintenance of Emergency Equipment
 - F.3.5.1 Equipment Testing
 - F.3.5.2 Schedule
 - F.3.6 Aisle Space
- F.4 Preventive Procedures, Structures, and Equipment
 - F.4.1 Unloading Operations
 - F.4.2 Run-off
 - F.4.3 Water Supplies
 - F.4.4 Equipment and Power Failure
 - F.4.5 Personnel Protection Equipment

RECEIVED
JUN 14 2010
IEPA-BOL
PERMIT SECTION

G Evaluation-Assessment of Potential Hazards and Contingency Plan

H Personnel Training

- H.1 Training Program
 - H.1.1 Training Director
 - H.1.2 Job Title – Job Description
 - H.1.3 Relevance of Training to Job Position
 - H.1.4 Outlines of Training Programs
 - H.1.4.1 Training Content, Frequency and Techniques
 - H.1.4.2 Training for Emergency Response
- H.2 Implementation of Introductory and Continuing Training Programs
 - H.2.1 Completion of Training
 - H.2.2 Recordkeeping

I Closure and Post-Closure Requirements

- I.1 Closure Plan
 - I.1.1 Closure Performance Standard
 - I.1.1.1 General Requirements
 - I.1.1.2 Specific Requirements
 - I.1.2 Maximum Operations and Waste Inventory
 - I.1.3 Partial Closure
 - I.1.4 Closure Methods
 - I.1.5 Removal and Decontamination Procedures
 - I.1.6 Other Activities
 - I.1.7 Unit Specific Closure Activities
 - I.1.7.1 Closure of Container Storage Areas
 - I.1.7.2 Closure of Tank Systems
 - I.1.8 Closure Schedule
 - I.1.9 Expected Year of Final Closure
 - I.1.10 Alternate Requirements
- I.2 Post-Closure Plan
 - I.2.1 Applicability
 - I.2.2 Post-Closure Inspection Plan
 - I.2.2.1 Items Inspected
 - I.2.2.2 Types of Problems
 - I.2.2.3 Inspection Frequency
 - I.2.2.4 Documentation of Inspection
 - I.2.2.5 Repair Log
 - I.2.2.6 Contents of Repair Log
 - I.2.2.7 Repair Times
 - I.2.3 Post-Closure Monitoring Plan
 - I.2.4 Post-Closure Maintenance Plan
 - I.2.4.1 Procedures, Equipment, and Materials
 - I.2.4.2 Rationale

- I.3 Survey Plat
 - I.3.1 Identify Units/Areas
 - I.3.2 Note on Plat
 - I.3.3 Certification of Plat
 - I.3.4 Recording of Survey Plat
 - I.3.5 Existing Facilities with Closed Disposal Units
- I.4 Notice in Deed and Certification
 - I.4.1 Notice in Deed
 - I.4.2 Certification of Notification
 - I.4.3 Existing Facilities with Closed Disposal Units
- I.5 Closure Cost Estimate
 - I.5.1 Third Party Costs
 - I.5.2 Maximum Cost Estimate
 - I.5.3 Unit Costs
 - I.5.4 Annual Updates
- I.6 Financial Assurance Mechanism for Closure
- I.7 Post-Closure Cost Estimate
 - I.7.1 Third Party Costs
 - I.7.2 Unit Costs
 - I.7.3 Annual Cost Estimate
 - I.7.4 Post-Closure Cost Estimate
 - I.7.5 Annual Updates
- I.8 Financial Assurance Mechanism for Post-Closure Care
- I.9 Liability Requirements
 - I.9.1 Copies of Financial Assurance Documentation
 - I.9.2 Request for Variance
- I.10 State Mechanisms

J Other Federal Laws

K Corrective Action

- K.1 Identification of Solid Waste Management Units
- K.2 Characterization of the SWMUs
- K.3 Characterization of Releases from SWMUs
- K.4 Information Required in the Renewal Application
 - K.4.1 Required Information if USEPA Oversaw Initial Corrective Action Program
 - K.4.2 Required Information if Illinois EPA Oversaw Initial Corrective Action Program
 - K.4.2.1 Chronology of Corrective Action Efforts to Date
 - K.4.2.2 Corrective Action Correspondence With Illinois EPA
 - K.4.2.3 Solid Waste Management Units
 - K.4.2.4 Groundwater Monitoring

AA Air Emission Standards for Process Vents

BB Air Emission Standards for Equipment Leaks

CC Air Emission Standards for Tanks, Surface Impoundments, and Containers

- CC.1 Exemptions from Subpart CC
- CC.2 Exemptions from 35 IAC 724.984 through 724.987 and 40 CFR 264.1084 through 264.1087
- CC.3 Standards for Tanks
- CC.4 Standards for Surface Impoundments
- CC.5 Standards for Containers
 - CC.5.1 Level 1 Standards
 - CC.5.1.1 Containers
 - CC.5.1.2 Covers and Closure Devices
 - CC.5.2 Level 2 Standards
 - CC.5.2.1 Container
 - CC.5.2.2 Covers, Closure Devices, Pressure Relief Devices, and Safety Device
 - CC.5.3 Level 3 Standard
- CC.6 Waste Transfer
- CC.7 Repairs
- CC.8 Standards for Closed-vent Systems and Control Devices
- CC.9 Inspection and Monitoring Requirements
 - CC.9.1 Compliance with 35 IAC 724.984 through 724.987 and 40 CFR 264.1084 through 264.1087
 - CC.9.2 Implementation of a Written Plan
- CC.10 Record Keeping Requirements
- CC.11 Reporting Requirements

LIST OF TABLES

A-1	Other Environmental Permits
A-2	Permit Application Documents at the Lemont Public Library District
A-3	Permit Application Documents at the Lemont Village Hall
B-1	Waste Management Units Present at the Refinery
B-2	Facility Map Requirements Cross-Reference Table
B-3	Wells Within 1000 Feet of the Refinery's Property Boundary
E-1	Facility Map Requirements Cross-Reference Table
E-2	Hydraulic Properties of the Uppermost Aquifer
E-3	Indicator Parameters for Groundwater Samples
E-4	Well and Groundwater Elevation Data
E-5	Construction Details of Wells and Piezometers
E-6	Sample Container and Preservative Specifications for Groundwater Samples
E-7	Preparatory and Analytical Methods for Groundwater Samples
E-8	Acceptance Criteria for Quality Control Samples
E-9	Derived Background Values—Groundwater Monitoring Program
E-10	Additional Monitoring Limit Values – Groundwater Monitoring Program
E-11	Illinois EPA Groundwater Database Well UA-1 Values – 1998-2006
F-1	Land Treatment Facility Typical Inspection Schedule
F-2	Emergency Equipment Inspection Schedule
F-3	Justification for Inspection Frequencies
H-1	Refinery Positions Related to RCRA Hazardous Waste Management Activities
I-1	Maximum Inventory of Waste Treated at the LTF
I-2	Closure Schedule for the LTF
I-3	Analytical Parameters for UA-Series Wells
I-4	Derived Background Values-Groundwater Monitoring Program
I-5	Modified Skinner Constituents for Analysis
I-6	Unsaturated Zone Constituents for Analysis
I-7	Complete Unsaturated Zone Monitoring Parameter List and Associated Monitoring Limits
I-8	Summary of Soil Analytical Data for Unsaturated Zone Monitoring – Years 1-10
I-9	Closure Cost Estimate
I-10	Post-Closure Cost Estimate
K-1	Chronology of Corrective Action Efforts to Date
K-2	Corrective Action Correspondence
K-3	Waste Management Units Present at the Refinery
K-4	Construction Details of Site Wide Groundwater Monitoring Program Wells

LIST OF FIGURES

CC-1	Container Control Levels
B-1	Facility + 1 Mile
B-2	Facility + 1000 feet (1 of 5)
B-3	Facility + 1000 feet (2 of 5)
B-4	Facility + 1000 feet (3 of 5)
B-5	Facility + 1000 feet (4 of 5)
B-6	Facility + 1000 feet (5 of 5)
B-7	FEMA FIRM Map for Will County, Illinois
B-8	Key Map
B-9	USGS Topographic Contours
B-10	Detailed Access Point Descriptions
E-1	Geologic Cross-Section A-A'
E-2	Geologic Cross-Section F-F'
E-3	Cross-Section Locations
E-4	Locations of Monitor Wells and Piezometers
E-5	Potentiometric Surface Contour Map 4 th Quarter 2006 (Trihydro Corporation)
E-6	B-Series Piezometers Potentiometric Surface – October 2006 (Shaw)
E-7	UA-Series Wells Potentiometric Surface – October 2006 (Shaw)
E-8	Example Sample Label
E-9	Example Chain-of-Custody Form
E-10	Example Custody Seal
I-1	LTF Area I Soil-Core Sample Locations – November 2006
I-2	LTF Area II – IV Soil-Core Sample Locations –November 2006
K-1	Solid Waste Management Unit Location Map
K-2	Locations of Items Associated with Corrective Action

LIST OF APPENDICES

- A.1.1 RCRA Part A Permit Application
 - Attachment 1 List of Other Environmental Permits
 - Attachment 2 Topographic Map
 - Attachment 3 Facility Drawing & Aerial Photograph
- A.2.2 Facility Certification
- A.2.4 Prior Conduct Certifications
- A.3.3 Claim and Justification Letter for Exempt Data Claims
- A.4.1.1 Facility Mailing List
- A.4.1.4 Public Notice of Repository Availability and Permit Renewal Application Submittal
- A Versions of the Prior Conduct Certifications Available for Public Review
- B.2.3 Legal Descriptions of Property Owned by the Refinery
- E.6.2 Groundwater Sampling and Analysis Plan (Geraghty & Miller, Inc., December 1996)
- E.6.3 Well Completion Reports
- F.2.1 Typical Inspection Logs
- F.3.4 Certification of Adequate Water Volume and Pressure
- F Version of Section F Available for Public Review
- H.2.2.2 Example Training Record
- I.1 CAMU Permit Modification Request
- I.1.5 Soil-Core Sampling Standard Operating Procedures
- I.1.6-1 Unsaturated Zone Monitoring Plan and Addendum
- I.1.6-2 Groundwater Monitoring Plan and Addendum
- I.2.2 Facility Inspection Form
- I.2.2.6 Repair Log
- I.6 Financial Assurance Documentation
 - Claimed Exempt in the Public Record Version***
- I.6-A Version of Appendix I.6 Available for Public Review
- K.4.2.2-1 Chronological Summary of Correspondence Between Illinois EPA and the Lemont Refinery
- K.4.2.2-2 Chronological Copies of Letters and Permits Between the Illinois EPA and the Lemont Refinery

LIST OF ACRONYMS AND ABBREVIATIONS

°C	Degrees Celsius (Centigrade)
%CV	Relative Standard Deviation
°F	Degrees Fahrenheit
1990 Decision Guide	<u>Illinois EPA RCRA Part B Permit Application Decision Guide</u> (December 1990)
2006 Decision Guide	<u>Illinois EPA RCRA Part B Permit Application Decision Guide</u> (July 2006)
2006 Checklist	<u>Illinois EPA RCRA Part B Hazardous Waste Permit Application</u> <u>Completeness and Technical Evaluation Checklist</u> (July 2006)
AAS	Atomic Absorption Spectrometry
AASHO	American Association of State Highway Officials
ACL	Alternate Concentration Level
Act	Illinois Compiled Statutes Environmental Safety Environmental Protection Act
AEL	Appropriate Exposure Limit
Agency	U.S./Illinois Environmental Protection Agency
amsl	Above mean sea level
ANPR	Advanced Notice of Proposed Rulemaking
AOC	Area of Concern
API	American Petroleum Institute
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
atm	Atmospheres
bbl	Barrels
bgs	Below ground surface
BTZ	Below Treatment Zone
bpd	Barrels per Day
BTEX	Benzene, Toluene, Ethylbenzene, And Xylene
BIF	Boilers and Industrial Furnace
BOD ₅	Five-Day Biological Oxygen Demand
BP	Boiling Point
BTC	Background Threshold Concentration
BTU	British Thermal Units
BTZ	Below Treatment Zone
C	Ceiling
CAA	Clean Air Act
CAAPP	Clean Air Act Permit Program
CAMU	Corrective Action Management Unit
CAS	Chemical Abstracts Service Registry
CBT	computer-based training

LIST OF ACRONYMS AND ABBREVIATIONS (cont.)

CCR	Current Conditions Report
CFR	Code of Federal Regulations
CMI	Corrective Measures Implementation
CMS	Corrective Measures Study
CO	Carbon Monoxide
COC	Contaminants of Concern
COD	Chemical Oxygen Demand
COLIWASA	Composite Liquid Waste Sampler
CSM	Conceptual Site Model
CSSO	Central Security Services Office
CV	Coefficient of Variation
CWA	Clean Water Act
DOT	Department of Transportation
DQL	Data Quality Level
DRO	Diesel-Range Organic
ECD	Electron Capture Detector
EEGL	Emergency Exposure Guidance Limit
EI	Environmental Indicator
E&I	Electrical and Instrument
EPA	Environmental Protection Agency
EQL	Estimated Quantitation Limit
ERPG	Emergency Response Planning Guidelines
ERT	Environmental Response Team
ELUC	Environmental Land Use Controls
FCC	Fluid Catalytic Cracking Unit
FCCU	Fluid Catalytic Cracking Unit
FEMA	Federal Emergency Management Agency
FID	Flame-Ionization Detector
FIRM	Flood Insurance Rate Map
FOIA	Freedom of Information Act
g	Gram
gal.	Gallon
GC	Gas Chromatography
GDU	Gasoline Desulfurization Unit
GPD	Gallons Per Day

LIST OF ACRONYMS AND ABBREVIATIONS (cont.)

GPRA	Government Performance and Results Act
GRO	Gasoline-Range Organic
GMZ	Groundwater Management Zone
HAZWOPER	Hazardous Waste Operations and Emergency Response
HBL	Health-Based Level
HDPE	High-Density Polyethylene
HEBCA	Heat Exchanger Bundle Cleaning Area
HEXB	Heat Exchanger Bundle(s)
HF	Hydrofluoric
HF alky	Hydrofluoric alkylation (neutralization basin)
hPa	HectoPascals
HPLC	High-Performance Liquid Chromatography
HSA	Hollow Stem Auger
HSWA	Hazardous and Solid Waste Amendments
HWMF	Hazardous Waste Management Facility
HWMU	Hazardous Waste Management Unit
HSS&E	Health, Safety, Security, and Environmental
IAC	Illinois Administrative Code
IBC	Intermediate Bulk Container
ICPES	Inductively Coupled Plasma Emission Spectrometry
ICP-MS	Inductively Coupled Plasma – Mass Spectrometry
ID	Identification
IDL	Instrument Detection Limit
IDLH	Extremely Dangerous to Life or Health
IDOT	Illinois Department of Transportation
IL ELAP	Illinois Environmental Laboratory Accreditation Program
Ill. Rev. Stat.	Illinois Revised Statute
Illinois EOU	Illinois Emergency Operations Unit
IPCB	Illinois Pollution Control Board
IR	Infrared Spectrometry
kPa	KiloPascals
lb.	Pound
lbs.	Pounds
LCS	Laboratory Control Sample
LDR	Land Disposal Restriction
LEL	Lower Explosive Limit
LIMS	Laboratory Information Management System
LOQ	Limit of Quantitation
LTA	Land Treatment Area
LTF	Land Treatment Facility
LTL	Lower Tolerance Limit

LIST OF ACRONYMS AND ABBREVIATIONS (cont.)

MDEA	Monodiethanol amine
MDL	Method Detection Limit
MEA	Monoethanol amine
mg/kg	Milligram/kilogram
Misc.	Miscellaneous
mL	Milliliter
MOSC	Mobile Oil Sludge Coking
mph	Miles per hour
MPRSA	Marine Protection, Research, and Sanctuaries Act
MS	Mass Spectrometry
MS	Matrix Spike
MSD	Matrix Spike Duplicate
MSDS	Material Safety Data Sheet
MTBE	Methy Tert-Butyl Ether
MTR	Minimum Technology Requirement
MW	Molecular Weight
NA	North America (or Not Applicable)
NACE	National Association of Corrosion Engineers
NAPL	Non-aqueous Phase Liquids
NCDC	National Climatic Data Center
NELAP	National Environmental Laboratory Accreditation Program
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFA	No Further Action
NFPA	National Fire Prevention Association
NIOSH	National Institute for Occupational Safety and Health
NIST	National Institute of Standards and Testing
NP	Not Performed
NPDES	National Pollutant Discharge Elimination System
NRC	National Response Center
NTUS	Nephelometric Turbidity Units
OJT	On-the-Job Training
OPA	Oil Pollution Act
OSHA	Occupations Safety and Health Administration
Pa	Pascals
PAC	Powdered Activated Carbon
PAH	Polynuclear Aromatic Hydrocarbons
P.E.	Professional Engineer
PID	Photo Ionization Detector
PMP	Perimeter Monitoring Program
POC	Point of Compliance
PPB	Parts Per Billion
PPE	Personal Protective Equipment

LIST OF ACRONYMS AND ABBREVIATIONS (cont.)

ppm	Parts per million
ppm _v	Parts per million by volume
PQL	Practical Quantitation Limit
PSD	Prevention of Significant Deterioration
PVC	Polyvinyl Chloride
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
RAGS	<u>Risk Assessment Guidance for Superfund</u>
RCRA	Resource Conservation and Recovery Act
RCRIS	RCRA Information System
Refinery	Lemont, Illinois, Refinery
Renewal Application	RCRA Part B Permit Renewal Application
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RGN	Reactivity Group Number
RO	Remediation Objective
RPD	Relative Percent Difference
SCBA	Self-Contained Breathing Apparatus
SCFPU	Special Coker Feed Preparation Unit
SDWA	Safe Drinking Water Act
SG	Specific Gravity
SOP	Standard Operating Procedure
SPCC	Spill Prevention, Control, and Countermeasures
SPEGL	Short-Term Public Emergency Guidance Level
SPLP	Synthetic Precipitation Leaching Procedure
SR	State Route
STEL	Short-Term Exposure Limit
SVOC	Semivolatile Organic Compound
SW-846	<i>Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods</i> (U.S. EPA, Office of Solid Waste, Third Edition)
SWMU	Solid Waste Management Unit
SWPPP	Stormwater Pollution Prevention Plan
TACO	Tiered Approach to Corrective Action Objectives
TCLP	Toxicity Characteristic Leaching Procedure
TLV	Threshold Limit Value
TOC	Total Organic Carbon
TOX	Total Organic Halides
TPH	Total Petroleum Hydrocarbons

LIST OF ACRONYMS AND ABBREVIATIONS (cont.)

TRPH	Total Recoverable Petroleum Hydrocarbons
TRMA	Three Rivers Manufacturers' Association
TSDF	Treatment, Storage, and Disposal Facility
TU	Temporary Unit
TWA	Time-Weighted Average
UEL	Upper Exposure Limit
ug	Micrograms
ug/kg	Microgram/kilogram
UHC	Underlying Hazardous Constituent
UIC	Underground Injection Control
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
UTL	Upper Tolerance Limit
UTS	Universal Treatment Standard
UZM	Unsaturated Zone Monitoring
VCA	Voluntary Corrective Action
VHF	Very High Frequency
VOC	Volatile Organic Compound
VP	Vapor Pressure
VSI	Visual Site Inspection
WCSA	Waste Container Storage Area
WWTP	Wastewater Treatment Plant
WWTU	Wastewater Treatment Unit
ZOI	Zone of Incorporation

**RENEWAL PART B PERMIT APPLICATION
VOLUME 2, SECTION I, TABLES**

**Remove page entitled Tables for Closure and Post-Closure Requirements
and replace with attached Tables for Closure and Post-Closure Requirements.**

TABLES FOR CLOSURE AND POST-CLOSURE REQUIREMENTS

Tables

- I-1 Maximum Inventory of Waste Treated at the LTF
- I-2 Closure Schedule for the LTF
- I-3 Analytical Parameters for UA-Series Wells
- I-4 Derived Background Values-Groundwater Monitoring Program
- I-5 Modified Skinner Constituents for Analysis
- I-6 Unsaturated Zone Constituents for Analysis
- I-7 Complete Unsaturated Zone Monitoring Parameter List and Associated Monitoring Limits
- I-8 Summary of Soil Analytical Data for Unsaturated Zone Monitoring – Years 1-10
- I-9 Closure Cost Estimate
- I-10 Post-Closure Cost Estimate

**RENEWAL PART B PERMIT APPLICATION
VOLUME 3, TABLE OF CONTENTS**

**Remove Table of Contents
and replace with the attached Tables of Contents.**

TABLE OF CONTENTS

Illinois Environmental Protection Agency Checklist

Introduction

A Forms, Certifications, Confidentiality, and Public Involvement

- A.1 Forms and Permits
 - A.1.1 RCRA Part A Permit Application
 - A.1.2 Permits or Construction Approvals
- A.2 Certifications
 - A.2.1 Siting Certification
 - A.2.2 Facility Certification
 - A.2.3 Technical Information Certification
 - A.2.4 Prior Conduct Certification
- A.3 Public Disclosure Exemption Claims and Trade Secret Claims
 - A.3.1 Information Claimed Exempt from Public Disclosure
 - A.3.2 Trade Secrets Claims
 - A.3.3 Exempt or Exempt-In-Part Data Claims
 - A.3.4 Justification Letter
 - A.3.5 Privileged Information
- A.4 Public Participation
 - A.4.1 Facility Mailing List and Information Repositories
 - A.4.1.1 Facility Mailing List
 - A.4.1.2 Identification of Repositories
 - A.4.1.3 Contents of Repository, Public Notice of Repository Availability
 - A.4.1.4 Documentation of Public Notices of Repositories
 - A.4.2 Notification of Permit Application Submittal
 - A.4.2.1 Content of Permit Application Notice
 - A.4.2.2 Documentation of Permit Application Notice
 - A.4.2.3 New Combustion Units
 - A.4.3 Pre-application Meeting

B Facility Description

- B.1 General Description
 - B.1.1 Operation of Facility
 - B.1.2 Process Flow Diagram
 - B.1.3 Units
- B.2 Topographic Map
 - B.2.1 General Map Requirements

	B.2.1.1	Facility + One Mile
	B.2.1.2	Facility + 1,000 Feet
	B.2.2	Additional Map Requirements for New Land Disposal Facilities
	B.2.3	Legal Description
B.3	Location Standards	
	B.3.1	Seismic Standard
	B.3.2	Floodplain Standard
	B.3.3	Facilities in the 100-Year Floodplain
	B.3.4	Existing Facilities not in Compliance with 35 IAC 724.118(b)
B.4	Traffic Information	
B.5	Operating Record	
	B.5.1	Contents of Operating Record
	B.5.2	Installation of Tanks
C	Waste Characteristics	
D1	Containers	
D2	Tank Systems	
D3	Waste Piles	
D4	Surface Impoundments	
D5	Incinerators	
D6	Landfills	
D7	Land Treatment	
D10	Miscellaneous Units	
E	Groundwater Monitoring	
	E.1	Exemption from Groundwater Protection Requirements
	E.2	Interim Status Groundwater Monitoring Data
	E.3	Historical Hydrogeological Summary
	E.4	Topographic Map Requirements
	E.5	Contaminant Plume Description
	E.6	Detection Monitoring Program
	E.6.1	Indicator Parameters, Waste Constituents, Reaction Products to be Monitored
	E.6.2	General Monitoring Program Requirements
	E.6.3	Groundwater Monitoring System
	E.6.4	Description of Sampling and Analysis Procedures
	E.6.5	Evaluation of Groundwater Surface

- E.6.6 Background Quality
- E.6.7 Statistical Evaluations
- E.6.8 Statistically Significant Increases
- E.7 Compliance Monitoring Program
- E.8 Corrective Action Program
- E.9 Reporting Requirements
- E.10 Description of Corrective Action for Solid Waste Management Units

F Procedures to Prevent Hazards

- F.1 Security
 - Claimed Exempt in the Public Record Version*
 - F.1.1 Waiver from the Security Requirements
 - F.1.2 24-Hour Surveillance System
 - Claimed Exempt in the Public Record Version*
 - F.1.3 Barrier and Controlled Entry
 - Claimed Exempt in the Public Record Version*
 - F.1.4 Warning Signs
- F.2 Inspection Requirements
 - F.2.1 Inspection Log
 - F.2.1.1 Items Inspected
 - F.2.1.2 Types of Problems
 - F.2.1.3 Inspection Frequency
 - F.2.2 Repair Log
 - F.2.2.1 Contents of Repair Log
 - F.2.2.2 Repair Times
 - F.2.3 Container and Container Storage Area Inspection
 - F.2.4 Tank System Inspection
- F.3 Equipment Requirements
 - F.3.1 Waiver
 - F.3.2 Internal Communications
 - Claimed Exempt in the Public Record Version*
 - F.3.3 External Communications
 - Claimed Exempt in the Public Record Version*
 - F.3.4 Water for Fire Control
 - Claimed Exempt in the Public Record Version*
 - F.3.5 Testing and Maintenance of Emergency Equipment
 - F.3.5.1 Equipment Testing
 - F.3.5.2 Schedule
 - F.3.6 Aisle Space
- F.4 Preventive Procedures, Structures, and Equipment
 - F.4.1 Unloading Operations
 - F.4.2 Run-off
 - F.4.3 Water Supplies
 - F.4.4 Equipment and Power Failure
 - F.4.5 Personnel Protection Equipment

G Evaluation-Assessment of Potential Hazards and Contingency Plan

H Personnel Training

- H.1 Training Program
 - H.1.1 Training Director
 - H.1.2 Job Title – Job Description
 - H.1.3 Relevance of Training to Job Position
 - H.1.4 Outlines of Training Programs
 - H.1.4.1 Training Content, Frequency and Techniques
 - H.1.4.2 Training for Emergency Response
- H.2 Implementation of Introductory and Continuing Training Programs
 - H.2.1 Completion of Training
 - H.2.2 Recordkeeping

I Closure and Post-Closure Requirements

- I.1 Closure Plan
 - I.1.1 Closure Performance Standard
 - I.1.1.1 General Requirements
 - I.1.1.2 Specific Requirements
 - I.1.2 Maximum Operations and Waste Inventory
 - I.1.3 Partial Closure
 - I.1.4 Closure Methods
 - I.1.5 Removal and Decontamination Procedures
 - I.1.6 Other Activities
 - I.1.7 Unit Specific Closure Activities
 - I.1.7.1 Closure of Container Storage Areas
 - I.1.7.2 Closure of Tank Systems
 - I.1.8 Closure Schedule
 - I.1.9 Expected Year of Final Closure
 - I.1.10 Alternate Requirements
- I.2 Post-Closure Plan
 - I.2.1 Applicability
 - I.2.2 Post-Closure Inspection Plan
 - I.2.2.1 Items Inspected
 - I.2.2.2 Types of Problems
 - I.2.2.3 Inspection Frequency
 - I.2.2.4 Documentation of Inspection
 - I.2.2.5 Repair Log
 - I.2.2.6 Contents of Repair Log
 - I.2.2.7 Repair Times
 - I.2.3 Post-Closure Monitoring Plan
 - I.2.4 Post-Closure Maintenance Plan
 - I.2.4.1 Procedures, Equipment, and Materials
 - I.2.4.2 Rationale

- I.3 Survey Plat
 - I.3.1 Identify Units/Areas
 - I.3.2 Note on Plat
 - I.3.3 Certification of Plat
 - I.3.4 Recording of Survey Plat
 - I.3.5 Existing Facilities with Closed Disposal Units
- I.4 Notice in Deed and Certification
 - I.4.1 Notice in Deed
 - I.4.2 Certification of Notification
 - I.4.3 Existing Facilities with Closed Disposal Units
- I.5 Closure Cost Estimate
 - I.5.1 Third Party Costs
 - I.5.2 Maximum Cost Estimate
 - I.5.3 Unit Costs
 - I.5.4 Annual Updates
- I.6 Financial Assurance Mechanism for Closure
- I.7 Post-Closure Cost Estimate
 - I.7.1 Third Party Costs
 - I.7.2 Unit Costs
 - I.7.3 Annual Cost Estimate
 - I.7.4 Post-Closure Cost Estimate
 - I.7.5 Annual Updates
- I.8 Financial Assurance Mechanism for Post-Closure Care
- I.9 Liability Requirements
 - I.9.1 Copies of Financial Assurance Documentation
 - I.9.2 Request for Variance
- I.10 State Mechanisms

J Other Federal Laws

K Corrective Action

- K.1 Identification of Solid Waste Management Units
- K.2 Characterization of the SWMUs
- K.3 Characterization of Releases from SWMUs
- K.4 Information Required in the Renewal Application
 - K.4.1 Required Information if USEPA Oversight Initial Corrective Action Program
 - K.4.2 Required Information if Illinois EPA Oversight Initial Corrective Action Program
 - K.4.2.1 Chronology of Corrective Action Efforts to Date
 - K.4.2.2 Corrective Action Correspondence With Illinois EPA
 - K.4.2.3 Solid Waste Management Units
 - K.4.2.4 Groundwater Monitoring

AA Air Emission Standards for Process Vents

BB Air Emission Standards for Equipment Leaks

CC Air Emission Standards for Tanks, Surface Impoundments, and Containers

- CC.1 Exemptions from Subpart CC
- CC.2 Exemptions from 35 IAC 724.984 through 724.987 and 40 CFR 264.1084 through 264.1087
- CC.3 Standards for Tanks
- CC.4 Standards for Surface Impoundments
- CC.5 Standards for Containers
 - CC.5.1 Level 1 Standards
 - CC.5.1.1 Containers
 - CC.5.1.2 Covers and Closure Devices
 - CC.5.2 Level 2 Standards
 - CC.5.2.1 Container
 - CC.5.2.2 Covers, Closure Devices, Pressure Relief Devices, and Safety Device
 - CC.5.3 Level 3 Standard
- CC.6 Waste Transfer
- CC.7 Repairs
- CC.8 Standards for Closed-vent Systems and Control Devices
- CC.9 Inspection and Monitoring Requirements
 - CC.9.1 Compliance with 35 IAC 724.984 through 724.987 and 40 CFR 264.1084 through 264.1087
 - CC.9.2 Implementation of a Written Plan
- CC.10 Record Keeping Requirements
- CC.11 Reporting Requirements

LIST OF TABLES

A-1	Other Environmental Permits
A-2	Permit Application Documents at the Lemont Public Library District
A-3	Permit Application Documents at the Lemont Village Hall
B-1	Waste Management Units Present at the Refinery
B-2	Facility Map Requirements Cross-Reference Table
B-3	Wells Within 1000 Feet of the Refinery's Property Boundary
E-1	Facility Map Requirements Cross-Reference Table
E-2	Hydraulic Properties of the Uppermost Aquifer
E-3	Indicator Parameters for Groundwater Samples
E-4	Well and Groundwater Elevation Data
E-5	Construction Details of Wells and Piezometers
E-6	Sample Container and Preservative Specifications for Groundwater Samples
E-7	Preparatory and Analytical Methods for Groundwater Samples
E-8	Acceptance Criteria for Quality Control Samples
E-9	Derived Background Values—Groundwater Monitoring Program
E-10	Additional Monitoring Limit Values – Groundwater Monitoring Program
E-11	Illinois EPA Groundwater Database Well UA-1 Values – 1998-2006
F-1	Land Treatment Facility Typical Inspection Schedule
F-2	Emergency Equipment Inspection Schedule
F-3	Justification for Inspection Frequencies
H-1	Refinery Positions Related to RCRA Hazardous Waste Management Activities
I-1	Maximum Inventory of Waste Treated at the LTF
I-2	Closure Schedule for the LTF
I-3	Analytical Parameters for UA-Series Wells
I-4	Derived Background Values-Groundwater Monitoring Program
I-5	Modified Skinner Constituents for Analysis
I-6	Unsaturated Zone Constituents for Analysis
I-7	Complete Unsaturated Zone Monitoring Parameter List and Associated Monitoring Limits
I-8	Summary of Soil Analytical Data for Unsaturated Zone Monitoring – Years 1-10
I-9	Closure Cost Estimate
I-10	Post-Closure Cost Estimate
K-1	Chronology of Corrective Action Efforts to Date
K-2	Corrective Action Correspondence
K-3	Waste Management Units Present at the Refinery
K-4	Construction Details of Site Wide Groundwater Monitoring Program Wells

LIST OF FIGURES

CC-1	Container Control Levels
B-1	Facility + 1 Mile
B-2	Facility + 1000 feet (1 of 5)
B-3	Facility + 1000 feet (2 of 5)
B-4	Facility + 1000 feet (3 of 5)
B-5	Facility + 1000 feet (4 of 5)
B-6	Facility + 1000 feet (5 of 5)
B-7	FEMA FIRM Map for Will County, Illinois
B-8	Key Map
B-9	USGS Topographic Contours
B-10	Detailed Access Point Descriptions
E-1	Geologic Cross-Section A-A'
E-2	Geologic Cross-Section F-F'
E-3	Cross-Section Locations
E-4	Locations of Monitor Wells and Piezometers
E-5	Potentiometric Surface Contour Map 4 th Quarter 2006 (Trihydro Corporation)
E-6	B-Series Piezometers Potentiometric Surface – October 2006 (Shaw)
E-7	UA-Series Wells Potentiometric Surface – October 2006 (Shaw)
E-8	Example Sample Label
E-9	Example Chain-of-Custody Form
E-10	Example Custody Seal
I-1	LTF Area I Soil-Core Sample Locations – November 2006
I-2	LTF Area II – IV Soil-Core Sample Locations –November 2006
K-1	Solid Waste Management Unit Location Map
K-2	Locations of Items Associated with Corrective Action

LIST OF APPENDICES

- A.1.1 RCRA Part A Permit Application
 - Attachment 1 List of Other Environmental Permits
 - Attachment 2 Topographic Map
 - Attachment 3 Facility Drawing & Aerial Photograph
- A.2.2 Facility Certification
- A.2.4 Prior Conduct Certifications
- A.3.3 Claim and Justification Letter for Exempt Data Claims
- A.4.1.1 Facility Mailing List
- A.4.1.4 Public Notice of Repository Availability and Permit Renewal Application Submittal
- A Versions of the Prior Conduct Certifications Available for Public Review
- B.2.3 Legal Descriptions of Property Owned by the Refinery
- E.6.2 Groundwater Sampling and Analysis Plan (Geraghty & Miller, Inc., December 1996)
- E.6.3 Well Completion Reports
- F.2.1 Typical Inspection Logs
- F.3.4 Certification of Adequate Water Volume and Pressure
- F Version of Section F Available for Public Review
- H.2.2.2 Example Training Record
- I.1 CAMU Permit Modification Request
- I.1.5 Soil-Core Sampling Standard Operating Procedures
- I.1.6-1 Unsaturated Zone Monitoring Plan and Addendum
- I.1.6-2 Groundwater Monitoring Plan and Addendum
- I.2.2 Facility Inspection Form
- I.2.2.6 Repair Log
- I.6 Financial Assurance Documentation
 - Claimed Exempt in the Public Record Version***
- I.6-A Version of Appendix I.6 Available for Public Review
- K.4.2.2-1 Chronological Summary of Correspondence Between Illinois EPA and the Lemont Refinery
- K.4.2.2-2 Chronological Copies of Letters and Permits Between the Illinois EPA and the Lemont Refinery

LIST OF ACRONYMS AND ABBREVIATIONS

°C	Degrees Celsius (Centigrade)
%CV	Relative Standard Deviation
°F	Degrees Fahrenheit
1990 Decision Guide	<u>Illinois EPA RCRA Part B Permit Application Decision Guide</u> (December 1990)
2006 Decision Guide	<u>Illinois EPA RCRA Part B Permit Application Decision Guide</u> (July 2006)
2006 Checklist	<u>Illinois EPA RCRA Part B Hazardous Waste Permit Application</u> <u>Completeness and Technical Evaluation Checklist</u> (July 2006)
AAS	Atomic Absorption Spectrometry
AASHO	American Association of State Highway Officials
ACL	Alternate Concentration Level
Act	Illinois Compiled Statutes Environmental Safety Environmental Protection Act
AEL	Appropriate Exposure Limit
Agency	U.S./Illinois Environmental Protection Agency
amsl	Above mean sea level
ANPR	Advanced Notice of Proposed Rulemaking
AOC	Area of Concern
API	American Petroleum Institute
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
atm	Atmospheres
bbl	Barrels
bgs	Below ground surface
BTZ	Below Treatment Zone
bpd	Barrels per Day
BTEX	Benzene, Toluene, Ethylbenzene, And Xylene
BIF	Boilers and Industrial Furnace
BOD ₅	Five-Day Biological Oxygen Demand
BP	Boiling Point
BTC	Background Threshold Concentration
BTU	British Thermal Units
BTZ	Below Treatment Zone
C	Ceiling
CAA	Clean Air Act
CAAPP	Clean Air Act Permit Program
CAMU	Corrective Action Management Unit
CAS	Chemical Abstracts Service Registry
CBT	computer-based training

LIST OF ACRONYMS AND ABBREVIATIONS (cont.)

CCR	Current Conditions Report
CFR	Code of Federal Regulations
CMI	Corrective Measures Implementation
CMS	Corrective Measures Study
CO	Carbon Monoxide
COC	Contaminants of Concern
COD	Chemical Oxygen Demand
COLIWASA	Composite Liquid Waste Sampler
CSM	Conceptual Site Model
CSSO	Central Security Services Office
CV	Coefficient of Variation
CWA	Clean Water Act
DOT	Department of Transportation
DQL	Data Quality Level
DRO	Diesel-Range Organic
ECD	Electron Capture Detector
EEGL	Emergency Exposure Guidance Limit
EI	Environmental Indicator
E&I	Electrical and Instrument
EPA	Environmental Protection Agency
EQL	Estimated Quantitation Limit
ERPG	Emergency Response Planning Guidelines
ERT	Environmental Response Team
ELUC	Environmental Land Use Controls
FCC	Fluid Catalytic Cracking Unit
FCCU	Fluid Catalytic Cracking Unit
FEMA	Federal Emergency Management Agency
FID	Flame-Ionization Detector
FIRM	Flood Insurance Rate Map
FOIA	Freedom of Information Act
g	Gram
gal.	Gallon
GC	Gas Chromatography
GDU	Gasoline Desulfurization Unit
GPD	Gallons Per Day

LIST OF ACRONYMS AND ABBREVIATIONS (cont.)

GPRA	Government Performance and Results Act
GRO	Gasoline-Range Organic
GMZ	Groundwater Management Zone
HAZWOPER	Hazardous Waste Operations and Emergency Response
HL	Health-Based Level
HDPE	High-Density Polyethylene
HEBCA	Heat Exchanger Bundle Cleaning Area
HEXB	Heat Exchanger Bundle(s)
HF	Hydrofluoric
HF alky	Hydrofluoric alkylation (neutralization basin)
hPa	HectoPascals
HPLC	High-Performance Liquid Chromatography
HSA	Hollow Stem Auger
HSWA	Hazardous and Solid Waste Amendments
HWMF	Hazardous Waste Management Facility
HWMU	Hazardous Waste Management Unit
HSS&E	Health, Safety, Security, and Environmental
IAC	Illinois Administrative Code
IBC	Intermediate Bulk Container
ICPES	Inductively Coupled Plasma Emission Spectrometry
ICP-MS	Inductively Coupled Plasma – Mass Spectrometry
ID	Identification
IDL	Instrument Detection Limit
IDLH	Extremely Dangerous to Life or Health
IDOT	Illinois Department of Transportation
IL ELAP	Illinois Environmental Laboratory Accreditation Program
Ill. Rev. Stat.	Illinois Revised Statute
Illinois EOU	Illinois Emergency Operations Unit
IPCB	Illinois Pollution Control Board
IR	Infrared Spectrometry
kPa	KiloPascals
lb.	Pound
lbs.	Pounds
LCS	Laboratory Control Sample
LDR	Land Disposal Restriction
LEL	Lower Explosive Limit
LIMS	Laboratory Information Management System
LOQ	Limit of Quantitation
LTA	Land Treatment Area
LTF	Land Treatment Facility
LTL	Lower Tolerance Limit

LIST OF ACRONYMS AND ABBREVIATIONS (cont.)

MDEA	Monodiethanol amine
MDL	Method Detection Limit
MEA	Monoethanol amine
mg/kg	Milligram/kilogram
Misc.	Miscellaneous
mL	Milliliter
MOSC	Mobile Oil Sludge Coking
mph	Miles per hour
MPRSA	Marine Protection, Research, and Sanctuaries Act
MS	Mass Spectrometry
MS	Matrix Spike
MSD	Matrix Spike Duplicate
MSDS	Material Safety Data Sheet
MTBE	Methy Tert-Butyl Ether
MTR	Minimum Technology Requirement
MW	Molecular Weight
NA	North America (or Not Applicable)
NACE	National Association of Corrosion Engineers
NAPL	Non-aqueous Phase Liquids
NCDC	National Climatic Data Center
NELAP	National Environmental Laboratory Accreditation Program
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFA	No Further Action
NFPA	National Fire Prevention Association
NIOSH	National Institute for Occupational Safety and Health
NIST	National Institute of Standards and Testing
NP	Not Performed
NPDES	National Pollutant Discharge Elimination System
NRC	National Response Center
NTUS	Nephelometric Turbidity Units
OJT	On-the-Job Training
OPA	Oil Pollution Act
OSHA	Occupations Safety and Health Administration
Pa	Pascals
PAC	Powdered Activated Carbon
PAH	Polynuclear Aromatic Hydrocarbons
P.E.	Professional Engineer
PID	Photo Ionization Detector
PMP	Perimeter Monitoring Program
POC	Point of Compliance
PPB	Parts Per Billion
PPE	Personal Protective Equipment

LIST OF ACRONYMS AND ABBREVIATIONS (cont.)

ppm	Parts per million
ppm _v	Parts per million by volume
PQL	Practical Quantitation Limit
PSD	Prevention of Significant Deterioration
PVC	Polyvinyl Chloride
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
RAGS	<u>Risk Assessment Guidance for Superfund</u>
RCRA	Resource Conservation and Recovery Act
RCRIS	RCRA Information System
Refinery	Lemont, Illinois, Refinery
Renewal Application	RCRA Part B Permit Renewal Application
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RGN	Reactivity Group Number
RO	Remediation Objective
RPD	Relative Percent Difference
SCBA	Self-Contained Breathing Apparatus
SCFPU	Special Coker Feed Preparation Unit
SDWA	Safe Drinking Water Act
SG	Specific Gravity
SOP	Standard Operating Procedure
SPCC	Spill Prevention, Control, and Countermeasures
SPEGL	Short-Term Public Emergency Guidance Level
SPLP	Synthetic Precipitation Leaching Procedure
SR	State Route
STEL	Short-Term Exposure Limit
SVOC	Semivolatile Organic Compound
SW-846	<i>Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods</i> (U.S. EPA, Office of Solid Waste, Third Edition)
SWMU	Solid Waste Management Unit
SWPPP	Stormwater Pollution Prevention Plan
TACO	Tiered Approach to Corrective Action Objectives
TCLP	Toxicity Characteristic Leaching Procedure
TLV	Threshold Limit Value
TOC	Total Organic Carbon
TOX	Total Organic Halides
TPH	Total Petroleum Hydrocarbons

LIST OF ACRONYMS AND ABBREVIATIONS (cont.)

TRPH	Total Recoverable Petroleum Hydrocarbons
TRMA	Three Rivers Manufacturers' Association
TSDF	Treatment, Storage, and Disposal Facility
TU	Temporary Unit
TWA	Time-Weighted Average
UEL	Upper Exposure Limit
ug	Micrograms
ug/kg	Microgram/kilogram
UHC	Underlying Hazardous Constituent
UIC	Underground Injection Control
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
UTL	Upper Tolerance Limit
UTS	Universal Treatment Standard
UZM	Unsaturated Zone Monitoring
VCA	Voluntary Corrective Action
VHF	Very High Frequency
VOC	Volatile Organic Compound
VP	Vapor Pressure
VSI	Visual Site Inspection
WCSA	Waste Container Storage Area
WWTP	Wastewater Treatment Plant
WWTU	Wastewater Treatment Unit
ZOI	Zone of Incorporation

**RENEWAL PART B PERMIT APPLICATION
VOLUME 3, SECTION K**

**Remove pages 17 and 18
and replace with the attached pages 17 and 18.**

K.4.2.3 Solid Waste Management Units

A detailed discussion of each of the SWMUs identified and addressed in the original RCRA Part B Permit is included in this section along with a discussion of two SWMUs that have been added since the original permit. The discussion of each SWMU contains the following items:

- A detailed description of each SWMU of concern including details such as construction/operating details, types of waste managed at the unit, etc.;
- A scaled drawing showing the location of the unit within the facility (Figure K-1);
- A summary of the investigation/remediation efforts completed to date; and
- A discussion of any investigation/remediation efforts which must still be carried out to complete corrective action responsibilities for the unit.

A summary of each SWMU is provided in Table K-3. A summary of construction details of site wide groundwater monitoring program wells is provided in Table K-4. Figure K-1 is a scaled drawing showing the location for each of the SWMUs mentioned below. Figure K-2 presents locations of items associated with corrective actions as requested by IEPA.

SWMU 1 – Former Empty Drum Storage Area

SWMU 1 was located near the west gate of the Lemont Refinery west of the First Street and Western Avenue intersection. This SWMU was used as a container storage area located outdoors on an asphalt pad. This SWMU was operational from the 1970s until 1980. The pad and stained soils were removed in 1980. The wastes managed in this unit consisted of lubrication oils, but the quantity of wastes stored on the unit is unknown. It is not known if these wastes were considered hazardous wastes or if they contained potential hazardous constituents. There were no known releases in SWMU 1.

A work plan for the soil investigation at SMWU 1 was submitted to the Illinois EPA on October 13, 2001. On January 30, 2004, the Lemont Refinery submitted a “SWMU 1 Investigation” report to the Illinois EPA which detailed the results of the seven soil samples which were collected on November 19, 2001. The Illinois EPA requested that additional pH samples be collected at SWMU 1. The Lemont Refinery collected the two samples on March 11, 2004, and submitted the results to the Illinois EPA on May 6, 2004. After review of the soil investigation report and the additional pH sample data, a No Further Action (NFA) status for this SWMU was issued on June 1, 2004, by the Illinois EPA.

SWMUs 2A to 2E – Former Process Wastewater Line (Big Inch)

SWMUs 2A to 2E, consist of five sumps located within 100 feet of the I&M Canal along the former Process Wastewater Line (also known as the Big Inch). The former Process Wastewater Line extends from the northernmost process unit within the Lemont Refinery to the SWB. Beginning in 1983, the sumps were installed along the line to recover oil entering the line due to backflow when water levels in the SWB were high. The sumps minimized oil seepage from the line. The locations of the sumps are identified along the wastewater line in Figure K-1.

SWMUs 2B to E are operational units; however, in April 1991, process wastewater was removed from the line and only storm water is currently conveyed in the line.

Oily wastewater had been known to seep from the line during periods when the water level in the SWB was high and prevented the sewer line from flowing properly. The amount of wastewater released is unknown. The oily wastewater released potentially contained petroleum hydrocarbon constituents included in the Skinner List. The Skinner List includes constituents which the USEPA identified as potentially present in petroleum refinery wastes. The sumps were installed in 1983 as an interim action for collecting oil. Sampling began in 1981 to identify the source of the oil but a source was not determined. Additionally, in 1984, eleven locations were excavated along the Big Inch in the area of the seepages to investigate the sewer line, but no obvious defects were discovered. Oil absorbent booms were placed in the I&M Canal to contain any seepages that occurred.

According to the Group Phase I/II RFI Work Plan, the information gathered indicated that the source of contamination at the sumps was likely oil from the former API Separator (SWMU 3) in the North Plant. Since the separator was removed in 1984, a continuing source of constituents is no longer present. A release to soil was unlikely because the release was at or below the water table; therefore groundwater was the primary media of concern.

On March 26, 2004, a RCRA Streamlined Category A SWMU Work Plan was submitted to the Illinois EPA. Category A SWMUs were defined as locations where a release from a SWMU may have the potential of reaching the I&M Canal due to its proximity or that do not have existing hydraulic controls, or where there are currently no institutional controls or engineered barriers. SWMUs 2A to 2E were considered to be Category A SWMUs and were addressed in the March 26, 2004, submittal. The RCRA Streamlined Category A SWMU Work Plan proposed that one soil sample be taken adjacent to each sump, for a total of five soil samples. If a soil sample could not be

**RENEWAL PART B PERMIT APPLICATION
VOLUME 3, SECTION K, TABLES**

**Remove page entitled Tables for Corrective Action
and replace with attached Tables for Corrective Action.**

TABLES FOR CORRECTIVE ACTION

Tables

- K-3 Waste Management Units Present at the Refinery
- K-4 Construction Details of Site Wide Groundwater Monitoring Program Wells

**RENEWAL PART B PERMIT APPLICATION
VOLUME 3, SECTION K, TABLES**

Insert the attached Table K-4 after Table K-3.

**TABLE K-4. MONITORING WELL AND PIEZOMETER COMPLETION DATA SUMMARY
LEMONT REFINERY, LEMONT, ILLINOIS (MAY 2010)**

Well/ Piezometer	Date Drilled	Grade Elevation (ft-msl)	Stick Up Height (ft)	Measuring Point Elevation (ft-msl)	Total Depth (ft-bgs)	Screened Interval (ft-bgs)	Diameter (inches)
<u>SWMU 3</u>							
GQ-MW-3A	5/18/2006	589.04	2.87	591.91	18.50	8.0 - 18.0	4
GQ-MW-3B	5/22/2006	589.27	2.82	592.09	32.50	21.50 - 31.50	4
<u>SWMU 19B</u>							
GQ-MW-4	5/22/2006	590.25	2.49	592.74	18.00	7.50 - 17.50	4
<u>SWMU 31A</u>							
GQ-MW-5	5/31/2006	595.76	Flush Mounted	595.76	21.00	10.5 - 20.5	4
<u>SWMU 31B-E</u>							
GQ-MW-6	5/19/2006	594.56	2.60	597.16	18.00	7.5 - 17.5	4
GQ-MW-7	5/18/2006	593.44	3.17	596.61	18.00	7.5 - 17.5	4
GQ-MW-10	12/17/2007	592.08	2.14	594.22	21.00	10.0 - 20.0	4
<u>SWMU 43J</u>							
GQ-MW-8	5/24/2006	594.16	2.68	596.84	18.50	7.5 - 17.5	4
GQ-MW-9	5/16/2006	594.86	3.00	597.86	18.00	7.5 - 17.5	4
<u>SWMU 30</u>							
GQ-MW-11	12/17/2007	593.71	2.35	596.06	21.00	9.7 - 19.7	4
GQ-MW-12	12/17/2007	593.94	2.34	596.28	21.00	10.2 - 20.2	4
<u>SITE-WIDE WELLS</u>							
MW-101	5/21/2001	726.10	2.90	729.00	158.00	151 - 156	2
MW-102	5/24/2001	690.70	2.85	693.55	122.00	115 - 120	2
MW-103	5/31/2001	644.80	3.56	648.36	74.00	69.0 - 74.0	2
MW-104	6/4/2001	597.00	2.27	599.27	27.00	22.0 - 27.0	2
MW-105A (N)	6/5/2001	587.90	3.29	591.19	19.00	13 - 18	2
MW-105A (S)	6/5/2001	587.90	3.12	591.02	33.00	28.0 - 33.0	2
MW-106A	6/6/2001	587.20	2.60	589.80	18.00	12.0 - 17.0	2
MW-106B	6/6/2001	587.20	2.71	589.91	33.00	27.0 - 32.0	2
MW-107	6/6/2001	588.10	2.95	591.05	19.00	13.0 - 18.0	2
MW-108A	6/7/2001	589.00	2.69	591.69	20.00	14.0 - 19.0	2
MW-108B	6/7/2001	589.00	2.58	591.58	35.00	29.0 - 34.0	2
MW-109A	6/7/2001	587.90	2.93	590.83	19.00	13.0 - 18.0	2
MW-109B	6/7/2001	587.90	2.94	590.84	33.00	28.0 - 33.0	2
MW-110	6/11/2001	592.60	2.66	595.26	24.00	18.0 - 23.0	2
MW-111	9/22/2004	NA	NA	594.08	15.00	10 - 15	2
MW-112	9/8/2004	NA	NA	590.24	18.50	7.5 - 17.5	2
MW-113	10/5/2004	NA	NA	589.15	16.00	6 - 11	2
MW-114	9/8/2004	NA	NA	600.68	15.00	10 - 15	2
MW-115R	5/3/2006	592.30	2.29	594.59	19.40	7.5 - 17.5	4
MW-116	10/5/2004	NA	NA	607.33	16.00	10 - 15	2
MW-117	9/21/2004	NA	NA	598.44	14.50	9 - 14	2
MW-118	9/30/2004	NA	NA	737.03	151.00	140 - 145	2
MW-119	12/17/2007	613.72	1.86	615.58	21.00	10.0 - 20.0	4
MW-120	12/17/2007	676.26	2.49	678.75	68.00	57.0 - 67.0	4
MW-121	12/17/2007	724.87	2.29	727.16	111.00	100.0 - 110.0	4
MW-122	12/17/2007	595.64	2.14	597.78	21.00	10.0 - 20.0	4
<u>SITE WIDE PIEZOMETERS</u>							
PZ-1A	5/20/1993	593.87	Flush Mounted	293.52	20.00	18.0 - 20.0	2
PZ-2A	5/21/1993	593.17	Flush Mounted	592.81	20.00	18.0 - 20.0	2
PZ-3	5/26/1993	595.33	Flush Mounted	594.81	20.00	18.0 - 20.0	2
PZ-3A	5/21/1993	593.62	Flush Mounted	593.29	21.00	19.0 - 21.0	2
PZ-10	5/23/2006	585.19	2.91	588.10	16.00	5.5 - 15.5	2
PZ-11	5/24/2006	589.49	Flush Mounted	589.49	24.00	13.5 - 23.5	2
PZ-13	5/30/2006	592.62	Flush Mounted	592.62	21.00	10.5 - 20.5	2
PZ-15	5/25/2006	591.23	Flush Mounted	591.23	18.00	7.5 - 17.5	2
PZ-16	5/23/2006	588.69	2.72	591.41	22.50	11.5 - 21.5	2
PZ-17	12/17/2007	592.47	2.40	594.87	21.00	10.0 - 20.0	2
<u>GROUNDWATER RECOVERY WELLS</u>							
GRW-1	5/10/2006	588.07	2.64	590.71	24.40	13.9 - 23.9	5
GRW-2	5/22/2006	589.52	3.11	592.63	18.00	7.5 - 17.5	5
GQ-MW-2A**	5/22/2006	589.10	2.64	591.74	18.00	7.5 - 17.5	4

ft-msl Feet above mean sea level

ft-bgs Feet below ground surface

* No well construction log available

** Well GQ-MW-2A is functioning as a monitoring well and is also subject to a groundwater recovery system pilot study

**TABLE K-4. MONITORING WELL AND PIEZOMETER COMPLETION DATA SUMMARY
LEMONT REFINERY, LEMONT, ILLINOIS (MAY 2010)**

Well/ Piezometer	Date Drilled	Grade Elevation (ft-msl)	Stick Up Height (ft)	Measuring Point Elevation (ft-msl)	Total Depth (ft-bgs)	Screened Interval (ft-bgs)	Diameter (inches)
LAND TREATMENT FACILITY (LTF):							
<u>PIEZOMETERS</u>							
B-01	10/31/1987	NA	2.50	695.20	108.30	102 - 107	2
B-02	10/28/1987	NA	2.50	697.06	110.00	101 - 106	2
B-03	10/23/1987	NA	2.50	712.07	121.20	116 - 121	2
B-04	11/4/1987	NA	2.50	683.34	97.50	90 - 95	2
B-05	12/21/1987	NA	2.40	688.49	101.00	95 - 100	2
B-06	12/1/1987	NA	2.50	700.46	110.00	104 - 109	2
B-07	12/5/1987	NA	2.50	705.12	114.00	108 - 113	2
B-08	12/12/1987	NA	2.40	707.45	114.00	108 - 113	2
B-09	12/17/1987	NA	2.50	693.17	107.00	99 - 104	2
B-10	1/12/1988	NA	2.40	713.46	123.50	117 - 122	2
B-11	11/23/1987	NA	2.50	721.09	128.00	122 - 127	2
B-12	10/27/1987	NA	2.50	723.29	132.50	126 - 131	2
B-13	11/16/1987	NA	2.50	718.26	125.50	119 - 124	2
B-14	10/14/1987	NA	2.50	686.08	96.50	91 - 96	2
B-15	10/22/1987	NA	2.50	721.13	132.60	127 - 132	2
B-16	11/2/1987	NA	2.50	719.63	122.30	116 - 121	2
B-17	10/16/1987	NA	2.50	727.02	130.00	123 - 128	2
B-18R	12/17/2007	707.23	2.57	709.80	121.00	110.0 - 120.0	2
<u>MONITORING WELLS</u>							
UA-1	11/22/1988	715.30	2.50	718.80	104.40	92.1 - 102.1	2
UA-2	1/6/1989	689.70	2.50	692.24	82.00	70.0 - 80.0	2
UA-3	12/23/1988	694.90	2.80	697.73	86.60	74.7 - 84.7	2
UA-4	12/19/1988	693.10	2.90	695.98	84.00	72.1 - 82.1	2
UA-5	12/5/1988	691.90	2.90	694.84	95.50	72.1 - 87.1	2
UA-6	12/14/1988	698.30	3.50	701.76	91.00	79.0 - 89.0	2
GROUNDWATER MANAGEMENT ZONE (GMZ) AND STORM WATER BASIN (SWB):							
<u>MONITORING WELLS</u>							
GMZ-1	7/27/1994	589.79	3.40	593.25	21.10	6 - 16	2
GMZ-2	7/25/1994	595.29	2.80	598.16	18.33	4.5 - 14.5	2
GMZ-3	7/28/1994	594.10	2.70	596.81	17.31	7.0 - 17.0	2
GMZ-4	7/29/1994	593.98	2.10	596.08	18.90	5.5 - 15.5	2
GMZ-5	7/26/1994	591.16	2.00	593.19	14.50	4.0 - 14.0	2
GMZ-6*	7/26/1994	590.72	1.95	592.67	14.70	4.0 - 14.0	2
SWB-1	12/4/1990	590.42	2.01	592.43	24.20	14 - 24	2
SWB-2	12/5/1990	586.87	2.03	588.90	28.00	15 - 25	2
SWB-3	12/7/1990	586.55	1.98	588.53	19.60	8.5 - 18.5	2
SWB-4	12/6/1990	587.86	1.87	589.73	49.70	44.5 - 49.5	2
SWB-5	12/6/1990	587.83	2.14	589.97	18.00	8 - 18	2
SWB-6*	9/8/1992	NA	NA	589.28	NA	16 - 26	2
SWB-7*	9/1/1992	NA	NA	589.14	NA	17 - 27	2
SWB-8*	1/29/1993	NA	NA	588.95	NA	10 - 20	2
<u>PIEZOMETERS</u>							
P-01*	5/7/1991	NA	NA	598.35	NA	30 - 40	1
P-02*	5/15/1991	NA	NA	593.36	NA	13 - 23	1
P-03*	5/21/1991	NA	NA	593.23	NA	14 - 24	1
P-04*	5/23/1991	NA	NA	592.96	NA	14 - 24	1
P-05*	5/22/1991	NA	NA	593.10	NA	47 - 54	1
P-06*	5/24/1991	NA	NA	594.18	NA	10 - 20	1
P-07A*	8/26/1992	NA	NA	592.68	NA	12 - 22	1
P-08*	5/9/1991	NA	NA	592.68	NA	15 - 25	1
P-09*	5/13/1991	NA	NA	589.95	NA	11 - 21	1
P-10*	5/14/1991	NA	NA	588.98	NA	14 - 24	1
P-11*	5/13/1991	NA	NA	592.72	NA	15 - 25	1
P-12*	5/9/1991	NA	NA	591.01	NA	20 - 30	1
P-13*	5/8/1991	NA	NA	590.82	NA	45 - 50	1
P-14*	7/28/1991	590.88	2.33	593.21	NA	12.0 - 22.0	1
P-15*	7/27/1994	587.43	2.00	589.43	NA	10.0 - 20.0	1
CORRECTIVE ACTION PROGRAM WELLS:							
<u>SWMU 2A-E</u>							
GQ-MW-1A	5/12/2006	589.33	2.94	592.27	18.00	7.5 - 17.5	4
GQ-MW-1B	5/17/2006	589.38	2.83	592.21	32.00	21.5 - 31.5	4
GQ-MW-2A**	5/22/2006	589.10	2.64	591.74	18.00	7.5 - 17.5	4
GQ-MW-2B	5/22/2006	588.99	2.66	591.65	32.00	21.0 - 31.0	4

**RENEWAL PART B PERMIT APPLICATION
VOLUME 3, SECTION K, FIGURES**

**Remove page entitled Figures for Corrective Action
and replace with attached Figures for Corrective Action.**

FIGURES FOR CORRECTIVE ACTION

Figure

- K-1 Solid Waste Management Unit Location Map
- K-2 Locations of Items Associated with Corrective Action

**RENEWAL PART B PERMIT APPLICATION
VOLUME 3, SECTION K, FIGURES**

Add attached Figure K-2 after Figure K-1.

